

VZCZCXRO1708
RR RUEHGA RUEHHA RUEHQU RUEHVC
DE RUEHOT #0135/01 0252158
ZNR UUUUU ZZH
R 252158Z JAN 08
FM AMEMBASSY OTTAWA
TO RUEHC/SECSTATE WASHDC 7204
INFO RHEBAAA/DEPT OF ENERGY WASHDC
RUEAEPA/HQ EPA WASHDC
RUCPDOG/USDOC WASHDC
RUCNCAN/ALL CANADIAN POSTS COLLECTIVE

UNCLAS SECTION 01 OF 05 OTTAWA 000135

SIPDIS

SIPDIS

SENSITIVE

STATE FOR OES, EEB/ESC, WHA/CAN

DOE FOR INT'L AND POLICY AND IE-141

EPA FOR OFFICE OF THE ADMINISTRATOR AND INTERNATIONAL AFFAIRS

USDOC FOR 4320/ITA/MAC/WH/ONIA - WORD

E.O. 12958: N/A

TAGS: [ENRG](#) [SENV](#) [PGOV](#) [CA](#)

SUBJ: ELECTRIC POWER FROM CANADA: TRADE DWINDLES AS CONTINENT'S
NEEDED INFRASTRUCTURE REMAINS UNBUILT

SUMMARY/INTRODUCTION

11. (U) SENSITIVE, BUT UNCLASSIFIED.

12. (U) Five years ago, based on its extensive study, Embassy Ottawa concluded that while Canada's potential for new electric power development had been growing, its exports of power to the United States were likely to decline in coming decades. The main reason was transmission constraints. Obtaining permits to build or expand transmission lines had become very difficult, and efforts in both countries to restructure electric power markets had created uncertainty which discouraged investment.

13. (U) The result was too little transmission capacity. Thus, generating plants were increasingly being built close to markets, leading to heavy reliance on natural gas as a fuel, and reduced long-distance trade in electric power, including across the U.S.-Canadian border. Such factors threatened to make the entire North American electric grid less efficient and less resilient. These problems were subsequently highlighted by the northeastern power outage of August 2003, which affected millions in both countries. We reported in 2002 that Canadian stakeholders were ready and willing to join U.S. counterparts in developing a cohesive bi-national effort to address these problems, and this was borne out by Canadian engagement in the Power System Outage Task Force.

14. (SBU) The analysis in this message contains both good and bad news. The bad news is that the problems we identified in 2002 mostly remain. Electricity market restructuring has failed to advance in many jurisdictions and the needed catch-up of investment in North America's transmission grid has scarcely begun. Perhaps partly as a result, Canadian players for the most part have not moved ahead with major expansions of generation capacity. Instead, Canadian jurisdictions have resolved the mismatch between demand growth and supply growth by reducing net exports of power to their neighbors. If and when new generating resources come on stream, a lack of transmission investment in the northern tier of U.S. States will help tilt Canadian options in favor of building links east-west between provinces (links which are currently underdeveloped), rather than the more usual pattern southward into the USA.

15. (U) The good news is that the opportunities we saw in 2002 also remain present. Canada continues to have enormous undeveloped generating potential. Many Canadian players are interested in

tapping this potential and opening up export opportunities. Our two countries' bi-national response to the August 2003 outage clearly demonstrated that we can coordinate successful, high-level approaches to the sector's problems. The U.S. Energy Policy Act of 2005 strengthened the USG's capacity to address these challenges. In particular, USDOE's 2006 National Electric Transmission Congestion Study focused attention on the capacity issue in the U.S. domestic grid, including specific problem areas in northern border states.

END SUMMARY/INTRODUCTION

THE PROBLEM

¶6. (U) Early in 2001, with energy policy at the top of the new Administration's agenda, then Canadian Prime Minister Jean Chretien suggested to President Bush that transmission grid improvements could unlock major undeveloped electric generating resources in Qcould unlock major undeveloped electric generating resources in Canada. While Chretien focused particularly on hydroelectric sites in northern Manitoba (Nelson River), there was considerable potential in hydro resources in other regions (such as Labrador and Quebec) and in oilsands cogeneration in Alberta.

¶7. (U) While several Canadian provinces have abundant environmentally and politically acceptable opportunities for new power generation, these opportunities are constrained by sheer distance from markets and severe obstacles of either access or capacity on the transmission side. These obstacles are not limited to Canada, but are continent-wide.

¶8. (SBU) As a result, in much of North America for the past decade, investment in generation has been biased toward natural-gas-fired plants. These can be sited close to markets because they are

OTTAWA 00000135 002 OF 005

relatively low in emissions, and because gas pipelines effectively substitute for power lines (being buried, gas lines are less visible and thus more acceptable to property owners, who hate overhead power lines). Industry observers worry that this trend over-commits the electric power sector to a relatively high-cost fuel, that the stock of these gas-fired plants might outlive the era of abundant natural gas in North America, and that the lack of investment in long-distance transmission is making the whole continental power grid less flexible, efficient, and reliable.

SUGGESTED REMEDIES, THEN AND NOW

¶9. (SBU) In 2002, suggested remedies for the problem of grid underinvestment fell into four general categories:

- The U.S. and Canada should develop a high-level binational plan for the continental transmission grid. (This has not occurred).
- The USG should consider assuming "eminent domain" over the siting of transmission lines. (Federal energy corridors are being designated in areas experiencing constraints and congestion, and FERC now has authority to issue construction permits for transmission facilities in these corridors).
- Regional Transmission Organization (RTO) formation should be expedited. (This has occurred, with RTOs now covering about two-thirds of the continental USA and much of Canada.)
- Priority should be given to developing innovative transmission technologies in order to expand grid capacity. (DOE's 2007 Strategic Plan for electricity deliverability begins to answer this need).

U.S. POLICY PROGRESS

¶10. (U) The bi-national Task Force which investigated the northeastern electric power outage of August 2003 made many

recommendations on institutional issues related to system reliability, as well as on how to support and strengthen the North American Electric Reliability Corporation (NERC - now the Electric Reliability Organization for both countries). Beyond the work of the Task Force, there remains potential for greater economic investment in the grid's capacity to make it more efficient and reliable and to open up new generating resources.

¶11. (U) While the Energy Policy Act of 2005 focused more heavily on the oil and nuclear industries than on the electric grid, it led FERC to develop incentive-based rate treatments for interstate transmission of electric power. The 2005 Act also led to USDOE's first National Electric Transmission Congestion Study (NETC study, August 2006). This document makes good progress in examining transmission congestion and identifying constrained areas of the grid within the United States. (Two such areas are adjacent to the Canadian border: New England and the Seattle-Portland area.)

¶12. (SBU) The NETC study also finds that large coal and wind resources in Minnesota, the Dakotas, Montana and Wyoming cannot be developed for electric generation without placing strains on the existing transmission grid in those States. In our view, this analysis could easily have been extended to cover coal, oilsand, wind and hydroelectric resources across western Canada (and indeed in other provinces). In order to be developed, these huge generating resources will require new transmission capacity within Canada and/or in adjacent States. If those investments do not occur in the United States, then Canadian proponents of new generation will reluctantly be left with a more limited and much sparser Canadian market.

¶13. (SBU) The Energy Policy Act of 2005 also directed the Administration to designate energy corridors on federal land in the United States, strengthening FERC's authority to permit the expansion of transmission capacity for electricity, oil, gas and hydrogen in areas experiencing constraints or congestion. While this is a great step forward, the proposed corridors barely reach the northern tier of states which are adjacent to Canada.

CANADIAN GENERATION AND TRANSMISSION OUTLOOK

OTTAWA 00000135 003 OF 005

¶14. (SBU) BRITISH COLUMBIA (which accounted for 11.5 percent of Canada's power generation in 2005) relies on a legacy of pre-1975 hydro dams built on the Columbia River and Peace River systems. The province exported large quantities of power to the western States in subsequent years while in-province demand "grew into" this generating overcapacity; demand is now catching up with supply and the governing philosophy is one of provincial self-sufficiency. For future demand, the priority is to purchase more power from independent producers. A potential large hydroelectric site known as "Site C" on the Peace River is the most likely large generating investment, but there is currently no time-line for its development.

¶15. (SBU) Transmission investment in B.C. has lagged in recent decades. A few modest transmission line reinforcements are in the works, none of which would cross the border. The GOC expects British Columbia's net power exports to the USA to decline from about 3 terawatt hours (TWH) in 2004 to about 1.1 TWH in 2020. Key obstacles to new infrastructure in B.C. are unresolved native land claims, which cover nearly all of the province's area.

¶16. (SBU) ALBERTA (9.5 percent of national generation) relies mainly on inexpensive local coal and natural gas as generating fuels. Increasingly, electricity is co-generated while natural gas is burned to extract bitumen from the province's vast northern oilsand deposits. This electricity is consumed locally by industry, which reduces the growth of industrial demand on the grid, helping to keep on-grid demand growth below 1 percent annually. Cogeneration could also make a net contribution to electricity supply, perhaps even changing the province's traditional status from small net importer

of power to net exporter if transmission capacity in Montana and Wyoming can be expanded. (Moreover, some in Alberta are seriously considering use of nuclear reactors to fuel bitumen extraction, which could boost the amount of power co-generated in this process).

Alberta has gone much further than other provinces in introducing competition to its electric power market. Several transmission investments are contemplated, including two which are cross-border: the likely-to-be-completed Montana Alberta Tie (240 kilovolts over 346 kilometers) and the ambitious Northern Lights project from the oilsands to Oregon (500 kilovolts over 1743 km), with a projected in-service date of 2012.

¶17. (SBU) MANITOBA (5.6 percent of national generation) has plans, but no timeline, for a low-unit-cost 1380 megawatt hydroelectric station at Conawapa on the lower Nelson River. While the environmental and land-claims obstacles to development appear to be moderate, the Conawapa site is remote from power markets and would require a major long-distance transmission line southward to Minneapolis/Chicago or eastward to the Toronto area. While Toronto is more distant from Manitoba than Chicago is, the eastward transmission route to Toronto is relatively uninhabited. This means that an all-new line to Toronto, costing over C\$1 billion, may be more feasible than expanding the grid's capacity in adjacent U.S. States, which according to Manitoba Hydro appears nearly impossible due to "not in my backyard" resistance. Around 2005-06, Ontario and Manitoba held discussions aimed at reinforcing and expanding their power interconnections, in what they describe as "a first step in creating a national east-west power grid." The GOC predicts that Manitoba's annual power exports to the USA will remain at about 11 TWH through 2020, but that sales to Ontario will roughly double to over 3 TWH even if Conawapa remains undeveloped, with greater growth if that project goes forward.

¶18. (SBU) ONTARIO (28.5 percent of national generation) has committed to close its four remaining large coal-fired generating facilities by 2014 due to air quality concerns, despite having limited options for new generating capacity. Recently, most new generating investment has been in natural-gas-fired peaking plants built close to demand centers in southern Ontario, and dozens of small renewable (wind, biomass, solar and hydroelectric) projects. The province is edging toward permitting new nuclear reactors (there are 18 power reactors in service or being refurbished) to provide the baseload power that will be needed in the future. Because those new reactors will not enter service before 2018, total nuclear capacity will actually decline over the coming decade. The Ontario Power Authority (OPA) has clearly stated that natural gas plants are

OTTAWA 00000135 004 OF 005

effectively projects of last resort - "when additional conservation and renewable resources are not feasible or cost effective."

¶19. (SBU) As it works to replace the baseload power currently generated by its coal plants, Ontario would like to have the flexibility to purchase energy generated from renewable sources from neighboring provinces and U.S. States. The OPA estimates that demand could exceed in-province supply from 2015 until new nuclear capacity comes online. The GOC's prediction for Ontario's net imports is strongly dependent on assumptions about the province's construction of new nuclear generating plants. Ontario is currently focused on building the internal transmission infrastructure needed to carry power from its new renewable energy projects and upgrading transmission lines linking the Bruce nuclear facility to large electricity demand centers. The province plans to expand its very limited east-west interprovincial transmission links in order to accommodate more imports. Use of provincial funds in this way is at least partly rationalized as an environmental investment which facilitates the shutdown of the coal-fired plants. The vast distance (over 1,200 road miles, some of which cross native lands) from the Manitoba border to the Toronto-area demand center, significantly complicates construction of this portion of the east-west transmission grid across Ontario.

¶20. (SBU) Currently only one of the transmission line projects under construction - a 20 kilometer, 230 kilovolt link to neighboring Quebec - would cross the province's boundary. With the exception of

the 2006 replacement of a 230 kv transmission line between Sarnia and Marysville, Michigan, Ontario's north-south transmission grid links to the U.S. have not been upgraded or expanded in recent years. In the near term, increased Ontario-U.S. transmission capacity is not a priority for Ontario policymakers and the Independent Electricity System Operator (IESO).

¶21. (SBU) QUEBEC (28.7 percent of national generation in 2005) has enormous hydroelectric capacity, both developed and undeveloped. Historically Quebec built transmission lines to support long-term net exports to the northeastern United States. The province has successfully added new medium-sized hydro generating plants in recent years, and has plans for at least one large development (La Romaine - 1500 megawatts) in the coming decade. Quebec is also investing in wind generating capacity, which is expected to reach 5.5 gigawatts by 2020. All these developments are located far from markets, so the ability to link them to the grid and strengthen overall transmission capacity is a crucial factor, as is the negotiation of long-term supply contracts with U.S. customers. Outside of developed areas in the province's south, Quebec seems to be making more progress than other provinces in expanding its transmission grid. However, all currently planned expansions appear to be either bringing new capacity into the grid, or strengthening export capacity to Ontario. Grid reinforcements in densely settled areas, notably those into the Montreal urban area and near the boundary with New York State, remain politically very difficult to achieve, and we understand that there are similar challenges on the U.S. side of the border.

¶22. (SBU) NEW BRUNSWICK (3.1 percent of generation) is expected to increase its power exports into Maine from 0.9 TWH in 2005 to 2.3 TWH by 2020, due to slow in-province demand growth and a diverse range of supply options (hydro, coal, nuclear, gas, wind). A 230 kilometer, 345 kilovolt line to the Bangor, Maine area is currently being completed.

¶23. (SBU) NEWFOUNDLAND AND LABRADOR (7.3 percent of generation) has most of its generating capacity at a remote location in Churchill Falls, Labrador, from which power is exported to the Quebec grid and into the northeastern United States. While large developments are contemplated for new sites on the Lower Churchill River, transmission depends on interprovincial arrangements with Quebec. If Quebec continues to invest in interprovincial ties with Ontario, the majority of new generation from Labrador could end up in the Ontario market. A more expensive export alternative for Newfoundland/Labrador would involve building transmission lines and undersea cables across the Island of Newfoundland and Cabot Strait to Nova Scotia and thence to New England, an ambitious (and early-stage) idea which Nova Scotia and Newfoundland have agreed to consider.

CONCLUSION/COMMENT

OTTAWA 00000135 005 OF 005

¶24. (SBU) Canada's annual net electric power exports to the United States halved in the first six years of the current decade, sliding from 36 TWH in 2000 to 18 TWH in 2006. The GOC expects Canada's net power exports to decline somewhat further over the next dozen years, to 15 TWH in 2015 and 14 TWH in 2020. U.S. markets will probably have access to increased net exports from two provinces (a modest increase from Alberta, more from New Brunswick), but as the 2006 U.S. NETC study implies, grid congestion in adjacent States may yet limit these opportunities.

¶25. (SBU) While the drive to open up electricity markets in both the U.S. and Canada appears to have slowed since around 2003, at least this slowdown has mitigated the uncertainty which may have been impeding investment previously. Compared with 2000-2002, we are reassured to find signs of an upswing in capital investment in the electric power industry. Still, too little of this investment is on the transmission side. Also, while the 2005 Energy Policy Act made great strides toward facilitating such investment, it treats the grid essentially as a domestic system and does not promote

investment in cross-border transmission. Where Canadian players are planning inter-jurisdictional connections, the biggest players - Ontario and Quebec - are thinking along east-west rather than north-south lines. Assuming provinces individually do not give in to parochial "self-sufficiency" thinking, power trade on such inter-provincial connections will bring benefits, but still, the benefits will be largely confined to Canada. As Prime Minister Chretien told President Bush seven years ago, removing obstacles to transmission investment, and growing the capacity for north-south power trade, would unlock major new electric power supplies and bigger economic gains for both countries.

WILKINS